

# **An Improved Caster Vibration-Proof Structure of a Suitcase**

## **Background of the Invention**

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Referring to Fig.1, conventional suitcase uses an axial pin to connect a caster base and a caster together. It causes vibration because of the absence of vibration-proof structure.

## **Summary of the Invention**

10 The present invention of an improved caster vibration-proof structure of a suitcase provides a more stable function of a vibration-proof caster structure and at the same time can enhance the efficiency of its structural assembly

The present invention will become more fully understood by reference to the following detailed description thereof when read in conjunction with the attached drawings.

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## **Brief Description of the Drawings**

Fig. 1 is a perspective exploded view of a first prior art;

Fig. 2 is a perspective exploded view of the present invention;

25 Fig. 3 is a sectional assembly view of the present invention;

Fig. 4 is a sectional assembly view of the present invention showing its vibration-proof feature;

Fig. 5 is a perspective exploded view of a second

embodiment of the present invention;

Fig. 6 is a sectional assembly view of the second embodiment of the present invention;

## 5     **Detailed Description of the Preferred Embodiment**

Referring to Figs. 2 to 4, the present invention of an improved caster vibration-proof structure of a suitcase mainly comprises a body 10, a caster base 20, a caster 30 pivotally  
10     disposed on the caster case 20, and a caster cover 40 for covering the caster 30.

The caster case 20 is in L-shape and a placing part 21 is disposed at its angle. A pair of corresponding positioning pivot  
15     parts 22 are disposed inside the placing part for the caster 30 to pivot on. Each positioning pivot part 22 having an enclosed placing hole 23 at a suitable location and a positioning spring groove 231 for placing and positioning an elastic element 50.

20     The caster 30 is in conventional structure and having a shaft 31 disposed on the center of the caster 30, an outer bushing 32 made of flexible material is disposed on the outside of the shaft 31.

25     The cover 40 having a hollow part 41 in corresponding to the sectional structure of the placing part 21, a concave covering part 42 is disposed on both ends of the hollow part 41 for

covering the shaft 31, so that the cover 40 can position the caster 30.

5 The elastic element 50 is a conventional spring structure, and having a circular positioning section 51 in corresponding to one end of the shaft 31 for sleeving on the shaft 31.

Accordingly, the present invention provides a simplified structure of elastic and vibration-proof caster 30 for the body  
10 10.

Please refer to Figs. 5 and 6, the second embodiment of the present invention. When the caster 30 is mounted on the caster base 20, the two ends of the placing part 21 for pivotally  
15 disposing the shaft 31 of the caster 30 are positioning groove 24 in long groove shape. The cover 40 having positioning pivot parts 43 for covering and positioning the shaft 31. An enclosed placing hole 44 and a positioning spring groove 441 are disposed on the positioning pivot part 43 for the elastic element 50 to  
20 place on. The elastic element 50 having the positioning section 51 at one end for sleeving the shaft 31 to ensure stable vibration-proof structure.

The present invention having a simple structure and ease of assembly.  
25 The main elements for achieving the vibration-proof function include the placing holes 23 or 34 for placing the elastic element 50, without other complicated structural elements. When assembling, simply sleeve the positioning section 51 disposed on one end of the elastic element 50 on the shaft 31 of the caster 30, so that the elastic element 50 is placed inside the

placing holes 23 or 44, then use the cover 40 to position it. The production cost is reduced and production efficiency can be enhanced because of its simple structure.

5           The present can also provide a stable vibration-proof function. After the positioning section 50 of the elastic element 51 sleeved on the shaft 31, the elasticity of the elastic element 50 can apply on the shaft 31 instantly when a vibration occurs, so that its vibration-proof function is enhanced. Besides, the  
10 inner hole of the outer bushing 32 is tightly sleeved on the shaft 31, the outer edge of the outer bushing 32 are also tightly in contact with the positioning pivot parts 22 and 43. Therefore, the caster 30 is firmly and stably pivoted, and to avoid dimensional inaccuracy of the pivotal assembly of the shaft 31  
15 and the positioning pivot parts 22 and 43, and loose structure due to wearing between the elements.

          Note that the specification relating to the above embodiment should be construed as exemplary rather than as  
20 limitative of the present invention, with many variations and modifications being readily attainable by a person of average skill in the art without departing from the spirit or scope thereof as defined by the appended claims and their legal equivalents.

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